

ABSTRACT

5 A system and method for increasing rendering efficiency in
pipelined graphics systems. In the disclosed embodiments, reads of pixel
information during the rendering of a primitive are suspend if the pixel
information has not been updated by a previous primitive. In some
embodiments, reads of pixel information are also suspended periodically
when a table tracking the information becomes full. In some embodi-
ments a Read Monitor Unit 108 controlled by the graphics system's
Memory Controller 106 is used to track pixels which have been affected
10 by rendered primitives. In some embodiments, a history list is used to
avoid suspension of reads for antialiased lines. In a particular embodi-
ment, the table used to track affected pixels is two-bits, the first bit
tracking whether the pixel has been touched by a primitive since the last
SuspendReads command was invoked and the second bit tracking whether
15 the pixel has been touched by the current primitive. Both bits are reset
when a power on or SuspendReads command occurs. The second bit is
also reset at the start of rendering for each primitive. In a separate
embodiment, a unique number is assigned to each primitive to be
rendered. The number is recorded for each active pixel touched by the
20 primitive. If an earlier primitive has touched this pixel, suspension of
reads can be invoked and the table reset (i.e., every entry is marked
invalid).